

IN THE CLAIMS

1. (Withdrawn) A method of forming an inductor, comprising:
depositing a layer of magnetic material on a germanium substrate;
depositing a non-magnetic insulating layer on the magnetic material layer;
depositing a triangular open inductor pattern on the insulating layer and above the magnetic material layer, wherein the open inductor pattern is unconnected to the layer of magnetic material;
depositing a second non-magnetic insulating layer on the inductor pattern; and
depositing a second magnetic material layer on the second non-magnetic insulating layer and above the open inductor pattern.
2. (Withdrawn) The method of claim 1, ~~further comprising forming~~ wherein the second non-magnetic insulating layer ~~to include~~ includes parylene.
3. (Withdrawn) The method of claim 1, ~~further comprising forming~~ wherein the layer of magnetic material ~~to include~~ includes iron.
4. (Withdrawn) The method of 1, ~~further comprising forming~~ wherein the second magnetic material layer ~~to include~~ includes a NiFe alloy having about 81% Ni and 19%Fe.
5. (Withdrawn) A method of forming an inductor, comprising:
depositing a layer of magnetic material on a germanium substrate;
depositing a non-magnetic insulating layer on the magnetic material layer;
forming a plurality of sandwich structures vertically stacked on the insulating layer, the structures comprising:
an open inductor pattern;
a first non-magnetic insulating layer deposited on the open inductor pattern;
a layer of magnetic material deposited on the first non-magnetic insulating layer;
a second non-magnetic insulating layer deposited on the magnetic material layer; and

forming a conductive path through the plurality of sandwich structures such that each open inductor pattern is serially connected to the inductor pattern above by the conductive path, and such that a current flowing in the serially connected inductor patterns creates a reinforcing magnetic field in the layer of magnetic material between adjacent inductor patterns.

6. (Withdrawn) The method of claim 5, ~~further comprising forming~~ wherein the layer of magnetic material ~~to include~~ includes iron.

7. (Withdrawn) The method of claim 5, ~~further comprising forming~~ wherein the non-magnetic insulating layer ~~to include~~ includes an inorganic silicon oxide film.

8. (Withdrawn) The method of claim 5, ~~further comprising forming~~ wherein the open inductor pattern ~~to include~~ includes gold.

9. (Withdrawn) A method of forming an inductor, comprising:
depositing a layer of magnetic material on a silicon-on-sapphire substrate;
depositing an insulating layer on the magnetic material layer;
forming a plurality of sandwich structures vertically stacked on the insulating layer, the structures comprising:
 an open inductor pattern;
 an insulating layer deposited on the open inductor pattern; and
 a layer of magnetic material deposited on the insulating layer and above the open inductor pattern;
 an insulating layer deposited on the magnetic material layer; and
forming a conductive path through the plurality of sandwich structures such each of the plurality of sandwich structures connected by the conductive path, and such that a current flowing in the plurality of sandwich structures creates a reinforcing magnetic field in the layer of magnetic material between adjacent inductor patterns.

10. (Withdrawn) The method of claim 9, ~~further comprising forming~~ wherein the second non-magnetic insulating layer ~~to include~~ includes polyimide.
11. (Withdrawn) The method of claim 9, ~~further comprising forming~~ wherein the layer of magnetic material ~~to include~~ includes iron.
12. (Withdrawn) The method of claim 9, ~~further comprising forming~~ wherein the second magnetic material layer ~~to include~~ includes a NiFe alloy.
13. (Currently Amended) A method of forming an inductor, comprising:
depositing a layer of magnetic material on a substrate;
depositing a non-magnetic insulating layer on the magnetic material layer;
forming a substantially circular open inductor pattern in the non-magnetic insulating layer and above the magnetic material layer, the open inductor pattern having an outer edge, wherein the open inductor pattern is unconnected to the layer of magnetic material;
depositing a second non-magnetic insulating layer on the open inductor pattern; and
depositing a second magnetic material layer deposited on the second non-magnetic insulating layer.
14. (Currently Amended) The method of claim 13, ~~further comprising forming~~ wherein the substantially circular open inductor pattern ~~to include~~ includes gold.
15. (Currently Amended) The method of claim 13, ~~further comprising forming~~ wherein the substantially circular open inductor pattern ~~to include~~ includes aluminum-copper.
16. (Currently Amended) The method of claim 13, ~~further comprising forming~~ wherein the non-magnetic insulating layer ~~to include~~ includes silicon dioxide.
17. (Currently Amended) The method of claim 13, ~~further comprising forming~~ wherein the second non-magnetic insulating layer ~~to include~~ includes an organic insulator.

18. (Currently Amended) A method of forming an inductor comprising:
depositing a layer of magnetic material on a substrate;
depositing a non-magnetic insulating layer on the magnetic material layer;
forming a circular open inductor pattern in the non-magnetic insulating layer and above the magnetic material layer, the open inductor pattern having an outer edge, wherein the open inductor pattern is unconnected to the layer of magnetic material;
depositing a second non-magnetic insulating layer on the open inductor pattern; and
depositing a second magnetic material layer on the second non-magnetic insulating layer.
19. (Currently Amended) The method of claim 18, ~~further comprising forming~~ wherein the circular open inductor pattern ~~to include~~ includes at least one of gold and aluminum-copper.
20. (Currently Amended) The method of claim 18, ~~further comprising forming~~ wherein the layer of magnetic material ~~to include~~ includes iron.
21. (Currently Amended) The method of claim 18, ~~further comprising forming~~ wherein the second non-magnetic insulating layer ~~to include~~ includes polyimide.
22. (Currently Amended) A method of forming an inductor comprising:
depositing a layer of magnetic material on a substrate;
depositing a non-magnetic insulating layer on the magnetic material layer;
forming a circular open inductor pattern in the non-magnetic insulating layer and above the magnetic material layer, the open inductor pattern having an outer edge;
depositing a second non-magnetic insulating layer on the open inductor pattern; and
depositing a second magnetic material layer on the second non-magnetic insulating layer.
~~The method of claim 18, further comprising forming~~ the second magnetic material layer ~~to include~~ including a NiFe alloy having about 81% Ni and 19%Fe.

23. (Currently Amended) A method of forming an inductor, comprising:
depositing a layer of magnetic material on a silicon-on-sapphire substrate;
depositing a non-magnetic insulating layer on the magnetic material layer;
forming a substantially circular open inductor pattern in the non-magnetic insulating layer and above the magnetic material layer, wherein the open inductor pattern is unconnected to the layer of magnetic material;
depositing a second non-magnetic insulating layer on the open inductor pattern; and
depositing a second magnetic material layer on the second non-magnetic insulating layer.
24. (Original) The method of claim 23, wherein the second non-magnetic insulating layer comprises parylene.
25. (Currently Amended) The method of claim 23, ~~further comprising forming~~ wherein the layer of magnetic material to include includes iron.
26. (Currently Amended) A method of forming an inductor, comprising:
depositing a layer of magnetic material on a silicon-on-sapphire substrate;
depositing a non-magnetic insulating layer on the magnetic material layer;
forming a substantially circular open inductor pattern in the non-magnetic insulating layer and above the magnetic material layer;
depositing a second non-magnetic insulating layer on the open inductor pattern; and
depositing a second magnetic material layer on the second non-magnetic insulating layer,
~~The method of claim 23, further comprising forming the second magnetic material layer to include~~ including a NiFe alloy having about 81% Ni and 19%Fe.
27. (Currently Amended) A method of forming an inductor, comprising:
depositing a layer of magnetic material on a gallium arsenide substrate;
depositing a non-magnetic insulating layer on the magnetic material layer;

forming a substantially circular open inductor pattern in the non-magnetic insulating layer and above the magnetic material layer, wherein the open inductor pattern is unconnected to the layer of magnetic material;

depositing a second non-magnetic insulating layer on the open inductor pattern; and
depositing a second magnetic material layer on the second non-magnetic insulating layer.

28. (Currently Amended) The method of claim 27, ~~further comprising forming~~ wherein the layer of magnetic material ~~to include~~ includes iron.

29. (Currently Amended) The method of claim 27, ~~further comprising forming~~ wherein the non-magnetic insulating layer ~~to include~~ includes inorganic silicon oxide film.

30. (Currently Amended) The method of claim 27, ~~further comprising forming~~ wherein the second non-magnetic insulating layer ~~to include~~ includes polyimide.

31. (Withdrawn) A method of forming an inductor, comprising:
depositing a layer of magnetic material on a substrate;
depositing a non-magnetic insulating layer on the magnetic material layer;
forming a plurality of sandwich structures vertically stacked on the insulating layer, the structures comprising:
a substantially circular open inductor pattern having an outer edge;
a first non-magnetic insulating layer deposited on the open inductor pattern;
a layer of magnetic material deposited on the first non-magnetic insulating layer;
a second non-magnetic insulating layer deposited on the magnetic material layer; and
forming conductive path through the plurality of sandwich structures such that each open inductor pattern is serially connected to the inductor pattern above by the conductive path, and such that a current flowing in the serially connected inductor patterns creates a reinforcing magnetic field in the layer of magnetic material between adjacent inductor patterns.

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32. (Withdrawn) The method of claim 31, ~~further comprising forming~~ wherein the layer of magnetic material ~~to include~~ includes a high permeability ferromagnetic material.
33. (Withdrawn) The method of claim 31, ~~further comprising forming~~ wherein the open inductor pattern ~~to include~~ includes a high conductivity material.
34. (Currently Amended) A method of forming an inductor, comprising:
depositing a magnetic material layer on a substrate;
depositing a non-magnetic insulating layer on the magnetic material layer;
depositing an open inductor pattern on the non-magnetic insulating layer and above the magnetic material layer, wherein the open inductor pattern is unconnected to the magnetic material layer;
depositing a second non-magnetic insulating layer on the open inductor pattern; and
depositing a second magnetic material layer on the second non-magnetic insulating layer.
35. (New) The method of claim 22, wherein the open inductor pattern includes iron.
36. (New) The method of claim 22, wherein the non-magnetic insulating layer includes silicon dioxide.
37. (New) The method of claim 26, wherein the open inductor pattern includes iron.
38. (New) The method of claim 26, wherein the non-magnetic insulating layer includes organic material.